TAPE CARRIER PACKAGE STRUCTURE WITH DUMMY PADS AND DUMMY LEADS FOR PACKAGE REINFORCEMENT

ABSTRACT OF THE DISCLOSURE

An improved tape carrier package (TCP) structure is proposed, which is characterized in the provision of dummy pads and dummy leads to help reinforce the package construction. The dummy pads are provided on the corners of the semiconductor chip, while the dummy leads are bonded between the dummy pads and corner-situated lead-bonding areas on the tape carrier. During assembly, since dummy leads are bonded between the dummy pads and corner-situated lead-bonding areas, the corners of the semiconductor chip can be firmly supported as well as the four sides of the semiconductor chip which are supported by the I/O leads. As a result, the package construction is reinforced. During inner-lead bonding (ILB) process, such reinforcement can help prevent the cracking of the I/O leads. Moreover, during encapsulation process, the provision of the dummy leads can help allow the encapsulation material to be more evenly distributed to the back side of the semiconductor chip, thus preventing undesired forming of voids in the resulted encapsulation body, making the resulted encapsulation body less likely subjected to popcorn effect and delamination. In addition, it can help provide a uniform package height (UPH) to the overall package construction. These advantages allow the finished TCP product to be more assured in quality and reliability.

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